

A contribution to the fauna of Mongolian *Phyllodesma* HÜBNER, 1820 species

(Lepidoptera, Lasiocampidae)

by

IGOR YU. KOSTJUK & VADIM V. ZOLOTUHIN

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Summary: *Phyllodesma griseum* spec. nov. and *Ph. mongolicum* spec. nov. are described for the territory of Mongolia. *Ph. ilicifolium sinina* sensu DANIEL, 1967 is excluded from the list of mongolian Lepidoptera. The occurrence of *Ph. jirii* KOSTJUK and *Ph. tremulifolium* HBN. in Mongolia has to be confirmed by further examination. The types of new taxa are kept in the Hungarian Natural History Museum (Budapest), in the collections of G. RONKAY, M. HREBLAY, GY. FABIAN and in the Zoological Museum of Kiev University (Ukraine).

Резюме: С территории Монголии описываются *Phyllodesma griseum* spec. nov. и *Ph. mongolicum* spec. nov. Таксон *Ph. ilicifolium sinina* sensu DANIEL, 1967, исключён из списка видов монгольских Lepidoptera как неверно определённый ранее. Наличие в Монголии *Ph. jirii* Kostjuk и *Ph. tremulifolium* Hbn. нуждается в специальном подтверждении. Типы новых таксонов хранятся в Венгском Музее Естественной Истории (Буданешт), в коллекциях Г. Ронкай, М. Хреблай, Г. Фабиан и Зоологическом музее Киевского университета (Украина).

2 species of *Phyllodesma* HBN. were mentioned for Mongolia till present time. They are *Ph. tremulifolium* HBN. (GROSSER, 1982) and a species of doubtful status preliminary determined as *Ph. ilicifolium sinina* GR.-GR. sensu DANIEL, 1967. The study of material kept in the Hungarian Natural History Museum (Budapest), in the collections of GY. FABIAN, M. HREBLAY, G. RONKAY and certain collections done by I. KOSTJUK in the Daurian steppes (SE Transbaikalia) immediately adjoining to north-east Mongolia is the basis of this article, dealing with the verification of the status of mongolian *Ph. ilicifolium sinina* and the descriptions of two new taxa.

It is a great pleasure for us to express our sincere thanks to Dr. A. VOJNITS (Hungarian Natural History Museum) and all our hungarian colleagues for their help in our work with their collections and Mr. MICHAELIS for text correction.

Phyllodesma griseum spec. nov.

Type material: Holotype ♂: Mongolia, Ömnögovı aimak, Govı Altai, mts. Gurvan Sayhan, 3 km W of Hürmen, 2100m, 104° 03' E, 43° 19' N, 10.V.1990, leg. GY. FABIAN, H. HREBLAY, L. PEREGOVITS & G. RONKAY. Paratype: 1 ♂, same data.

Male (colour plate XII, fig. 1): head, patagia, tegulae, abdomen and lower surface of body ash-grey, meso- and metathorax rust-coloured. Forewings ash-grey with strongly developed rustl-edged veins. Discal cellula whitish. Medial and external lines dark-grey, adexternal one toothed and weakly observed. Hindwings dark-grey with blackish-grey central transversal band and whitish spot heavy cut on the exterior edge (fig. 13). Forewing length 14.0–15.5 mm.

Male genitalia (fig. 1): aedoeagus with the craned down beak-shaped appendix and well observed tie round in the front of top. Dorsal surface of the top without presson. Vesica with single cornutus and two lateral groups of needle-shaped cornuti; right group twice less the left. Distal group of cornuti absent. Top of the single cornutus chopped. Valva with poorly craned apex and 2–3 small teeth on the outside edge (fig. 2).

Female: unknown.

Distribution: southern Mongolia, mts. Gurvan Sayhan (fig. 10).

Biology: unknown.

Remarks: This species looks like *Ph. tremulifolium* HBN. and *Ph. joannisi* LAJ. with the considerably relaxation of the yellow background and abundant in the grey colour, but differs well from both in the presence of the light adexternal band on the forewings and in the placing of the external line on the forewings which are connected with the wing apex in *tremulifolium* and *joannisi*, but with the costal edge in *griseum* spec. nov. (fig. 11, 12). *Ph. griseum* also differs well from *Ph. tremulifolium* in the absence of the distal group and in the sizes of lateral groups of cornuti in the vesica (fig. 3), and from *Ph. joannisi* in the considerably more strong development of the right lateral group of cornuti and in the straight chopped of the single cornutus top (fig. 4). Species is related to *Ph. jurii* KOSTJUK, which however has the equal sizes of both lateral groups of the slightly swelled in the basis cornuti and the beak-shaped appendix of its aedoeagus top is weak (fig. 7, 8). Differs well from *Ph. jurii* also in appearance (see below).

Phyllodesma mongolicum spec. nov.

Type material

Holotype ♂: Mongolia, Bulgan aimak, 64 km W of Erdenecant, 1260m, 104° 05' E, 47° 05' N, 23–24.V.1990, leg. GY. FABIAN, M. HREBLAY, L. PEREGOVITS & G. RONKAY.

Paratypes: 9 ♂♂, the same labels; 5 ♂♂, Mongolia, Central aimak, Tsagaan Davaa, 1400–1600m, 106° 05' E, 48° 17' N, 25–28.V.1990, leg. GY. FABIAN, M. HREBLAY, L. PEREGOVITS & G. RONKAY.

Male (colour plate XII, fig. 5): the whole body and background of the wings crimson-pink. Forewings with weakly observed greyish medial lines and obvious red-brown external one

well standing out because of the light adexternal band, practically straight, and considerably brightened exterior area of the wing. Discal cellula whitish. Hindwings with wide dark-grey transversal central line, roseish transversal band almost straight on the external edge and with the brightened exterior area. Forewing length 15.5–16.0 mm.

Male genitalia (fig. 5): aedoeagus without ties round with the craned easy top and with the weakly expressed beak-shaped appendix. Top dorsally with deep and well observed pression. Vesica with single cornutus on an apex and equal lateral groups of needle-shaped cornuti. Many paratypes of this taxon also have some little cornuti on the distal end of vesica. Valva with solitary thorn on the apex and fine jagged outside edge (fig. 6).

Female: unknown.

Distribution: central Mongolia (fig. 10).

Biology: unknown.

Remarks: This species is similar in appearance to *Ph. jurii* of the first generation, but the latter has no external line, light colouration of discal cellula, border of the light transversal band in hindwings (figs. 14, 15) and the exterior area of *jurii* hindwings is considerably darkened. Similar also to *Ph. japonicum ussuriense* LAJ. (colour plate XII, fig. 4) but differs from it in the absence of the grey background on the wings and body, in the form of hindwing's light adexternal band, more shorter aedoeagus, absence of the distal group of cornuti and in the size differentiation of cornuti of both lateral groups (fig. 9). A status of this taxon was a subject of our animated discussion. Of course we admit its close reliance to *Ph. jurii* but note that the majority of characters well separated both these young species one from another (table 1).

Table 1

Comparison of the males of *Phyllodesma jurii* and *Ph. mongolicum* of the first generation

| character | <i>jurii</i> | <i>mongolicum</i> |
|---|---|--|
| 1. Light adexternal band on forewings | weakly observed or absent | obvious and clear |
| 2. External line on forewings | absent | present |
| 3. Medial lines on forewings | weakly observed | wide, dark-grey well observed |
| 4. Discal cellula on forewings | badly distinguished or the same colouration as the background | whitish well distinguished on the background |
| 5. Dark transversal band of hindwings | narrow | wide and vague |
| 6. Distal edge of light transversal band of hindwings | not indistinct limited (fig. 14) | strongly limited by dark-grey colour (fig. 15) |
| 7. Aedoeagus foundation | wide conical | narrow back-conical |
| 8. Top of aedoeagus | short and weakly curved | elongated and curved |
| 9. Distal group of cornuti on vesica | absent | present in majority of specimens |

Phyllodesma jurii KOSTJUK, 1992

Material:

19 ♂♂, 1 ♀, Russia, SE Transbaicalia, flood of Onon river near Nizhnij Tsasuchej, 13. – 16., 20. – 30.VII.1989, 13. – 21.V., 11., 16.VII.1990; 4 ♂♂, Russia, SE Transbaicalia, Daurian steppes, eastern shore of the Zun-Torey lake, 600m, loc. Kuku-Khadan, 15.VII.1989; 1 ♂, Dauria, Solovjovsk env. near the Zun-Torey lake, 28.V.1991.

This species (colour plate XII, figs. 7, 8) may be found in Mongolia because it is known from the territory immediately bordered with Eastern aimak of the country (fig. 10) and it is possible that the taxa cited below as *Ph. ilicifolium sinina* and in HOU (1983, fig. 3055) as *Ph. ilicifolia japonica* for Inner Mongolia (China) do actually refer to *Ph. jurii*.

"Phyllodesma ilicifolium sinina" nec GR.-GR.

DANIEL (1967:206).

Material:

Mongolia, Sucheabaator aimak, Molzog elis, 2 km S von Somon Dariganga, 1150m, 5.VIII.1965, 1 ♂, 2 ♂♂ am selben Ort, 6.VIII.1965 (DANIEL, 1967).

All external characters mentioned by DANIEL for *Ph. ilicifolium sinina* are practically identical with those of *Ph. mongolicum*, and the picture of the male in DANIEL's work (colour plate XII, fig. 6) only confirms this definition. Hence genital slide of this taxon from 5.VIII. that was studied by us shows its close reliance to *Ph. jurii*. But we cannot say anything about a status of this taxon because a moth we had, collected on 6.VIII. (fig. 10), had its genitalia prepared, but was missing in the Hungarian Natural History Museum where the specimen is kept. The moth from 5.VIII., genital slide of which was in the deposition in the Museum, was also absent from the collection and it is possible that 2 different species were caught in these 2 days. At the same time this species does not belong to *Phyllodesma ilicifolium* L., because the latter differs by the complex of sufficiently stable characters in appearance (colour plate XII, fig. 9) and genitalia structure, so we cannot consider the absence of the distal group of cornuti, regular toothed of valva top, monotonous red-brown colouration and strong reduction of the wings lines and bands, which are typical both of *Ph. mongolicum* and *Ph. jurii* to whom DANIEL's moth is closely related, as the characters of the subspecific status only that DANIEL proposed to do after the recommendation of DE LAJONQUIERE. Moreover, all these features are not typical for *Phyllodesma sinina* GR.-GR., bona species! (colour plate XII, fig. 10).

Figs. 1–9: Male genitalia of *Phyllodesma* HBN. 1, 2 – *Ph. griseum* spec. nov.; 3 – *Ph. tremulifolium gemela* ZOLT. (from the original description); 4 – *Ph. joannisi* LAJ.; 5, 6 – *Ph. mongolicum* spec. nov.; 7, 8 – *Ph. jurii* KOST. (8 – from the original description); 9 – *Ph. japonicum ussuriense* LAJ. 1, 3–5, 7–9 – aedoeagi; 2, 6 – tops of valvae.



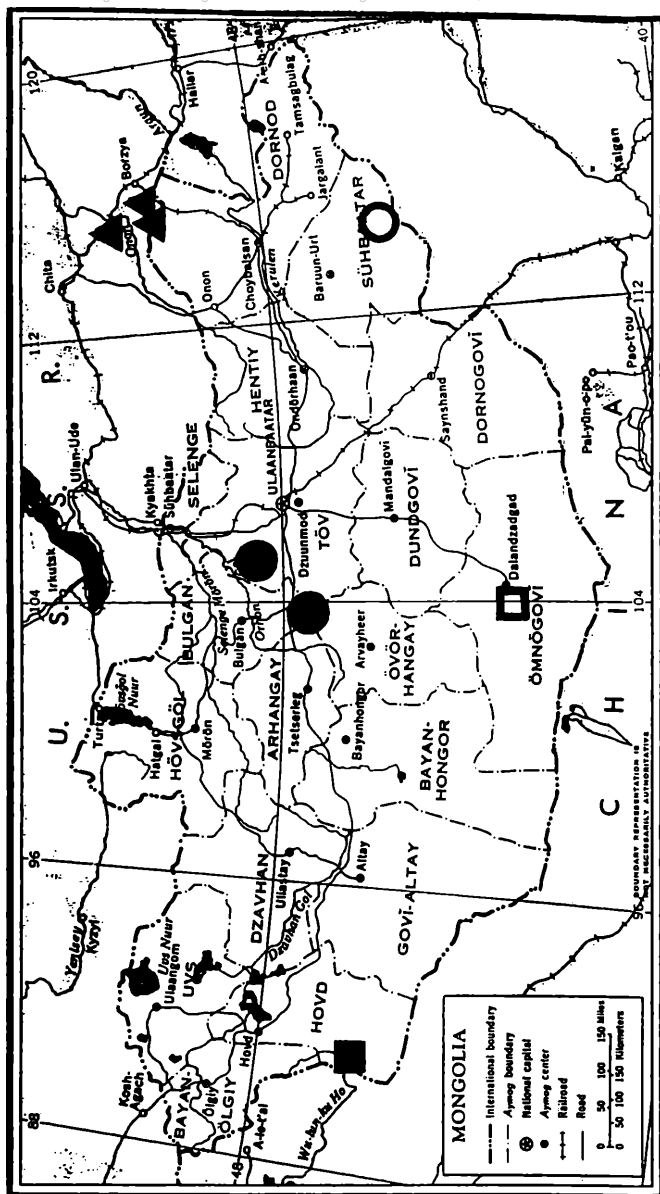
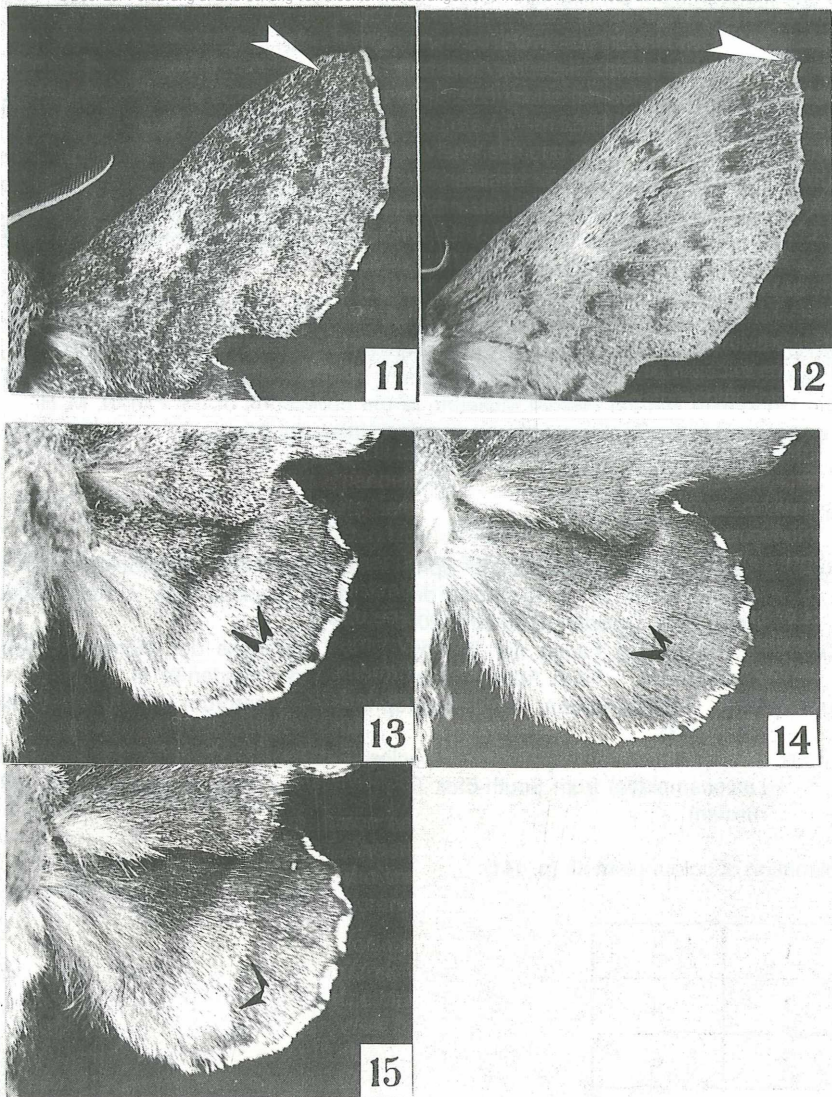


Fig. 10: Distribution of *Phyllodesma* HBN. in Mongolia and adjoining territories. ▲ – *Ph. jurii* KOST.; ● – *Ph. mongolicum* spec. nov.; □ – *Ph. griseum* spec. nov.; ○ – *Ph. "ilicifolium sinina"* sensu DANIEL, 1967; ■ – *Ph. tremulifolium* sensu GROSSER, 1982.



Figs. 11, 12: External line on the forewings. 11 – *Phyllodesma griseum* spec. nov.; 12 – *Ph. tremulifolium* HBN.

Figs. 13–15: Hindwings of *Phyllodesma* HBN. 13 – *Ph. griseum* spec. nov.; 14 – *Ph. jurii* KOST.; 15 – *Ph. mongolicum* spec. nov.

Phyllodesma tremulifolium HÜBNER, 1810

GROSSER (1982:138).

Material:

SW-Mongolei, Bulgan-gol, Wiedenwald, 8.V.1978, 1 ♀, M. STUBBE, H. ANSORGE, K. UHLENHAUT (GROSSER, 1982).

Discovery of this euro-siberian species in Mongolia (fig. 10) is quite possible since it is known for South-Western Siberia (as ssp. *gemela* ZOLT., colour plate XII, fig. 2), but it is highly desirable to confirm this record by the study of genitalia in order to prevent a confusion with *Ph. griseum* spec. nov.

Therefore 2 species of *Phyllodesma* – *griseum* and *mongolicum*, spp. nov. – are reliably noted for the territory of Mongolia. The presence of *Ph. tremulifolium* HBN. and *Ph. jirii* KOSTJUK needs to be confirmed by further examination. The types of all new taxa are kept in the Hungarian Natural History Museum, in the collections of GY. FABIAN, M. HREBLAY, G. RONKAY and in the Zoological Museum of Kiev University (Ukraine).

Literature

- DANIEL, F. (1967): 117. Bombyces und Sphinges. 2. Ergebnisse der Zoologischen Forschungen von Dr. Z. KASZAB in der Mongolei (Lepidoptera). – Reichenbachia Staat. Tierk. Dresden 9(23):201–208.
- GROSSER, N. (1982): Zur Fauna der Bombyces und Sphinges der Mongolei (Insecta, Lepidoptera). – Faun. Abhandl. Staat. Mus. Tierk. Dresden 9(13):137–140.
- HOU, T. (1983): Lasiocampidae. – Iconographia Heterocerorum Sinicorum, Beijing, 4:417–431.
- KOSTJUK, I. JU. (1992): A new lappet-moth species of the genus *Phyllodesma* (Lepidoptera, Lasiocampidae) from South-East Transbaicalia. – Vestnik Zoologii 4:85–87 (in russian).

Explanation of colour plate XII (p. 441):

| | |
|---|----|
| 1 | 2 |
| 3 | 4 |
| 5 | 6 |
| 7 | 8 |
| 9 | 10 |

- Fig. 1: *Ph. griseum* spec. nov., Holotype ♂.
Fig. 2: *Ph. tremulifolium gemela* ZOLT., ♂, Siberia, Novosibirsk.
Fig. 3: *Ph. joannisi* LAJ., ♂, Transcaucasus, Lagodekhi.
Fig. 4: *Ph. japonicum ussuriense* LAJ., ♂, Russian Far East, Lazo.
Fig. 5: *Ph. mongolicum* spec. nov., Paratype ♂, Mongolia, 64 km W of Erdenecant.
Fig. 6: *Ph. "ilicifolium sinina"* sensu DANIEL, 1967, ♂, Mongolia, Somon Dariganga.
Fig. 7: *Ph. jurii* KOST., Paratype ♂, Russia, Dauria, 1st generation.
Fig. 8: the same, 2nd generation.
Fig. 9: *Ph. ilicifolium* L., ♀, Ukraine.
Fig. 10: *Ph. sinina* GR.-GR., Holotype ♀, China.

addresses of the authors

IGOR YU. KOSTJUK
University, Zoological Museum
Vladimirskaia 60
252017 Kiev
Ukraine

VADIM V. ZOLOTUHN
University, Biology Faculty, Entomology Dept.
Universitetskaja 7/9
199034 St.-Petersburg
Russia

Colour plate XII

KOSTJUK, I. YU. & V. V. ZOLOTUHIN: A contribution to the fauna of Mongolian *Phyllodesma*
HÜBNER, 1820 species (Lepidoptera, Lasiocampidae). – *Atalanta* **25**(1/2):297–305.

Fig. 1: *Ph. griseum* spec. nov., Holotype ♂

Fig. 2: *Ph. tremulifolium gemela* ZOLT., ♂, Siberia, Novosibirsk.

Fig. 3: *Ph. joannisi* LAJ., ♂, Transcaucasus, Lagodekhi.

Fig. 4: *Ph. japonicum ussuriense* LAJ., ♂, Russian Far East, Lazo.

Fig. 5: *Ph. mongolicum* spec. nov., Paratype ♂, Mongolia, 64 km W of Erdenecant.

Fig. 6: *Ph. "ilicifolium sinina"* sensu DANIEL, 1967, ♂, Mongolia, Somon Dariganga.

Fig. 7: *Ph. jurii* KOST., Paratype ♂, Russia, Dauria, 1st generation.

Fig. 8: the same, 2nd generation.

Fig. 9: *Ph. ilicifolium* L., ♀, Ukraine.

Fig. 10: *Ph. sinina* GR.-GR., Holotype ♀, China.

| | |
|---|----|
| 1 | 2 |
| 3 | 4 |
| 5 | 6 |
| 7 | 8 |
| 9 | 10 |

Colour plate XII

